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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY Bulgaria

REPORT

SUBJECT Georgi Dimitrov Shipyards, Varna

DATE DISTR. 7 June 1957

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REQUIREMENT

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DATE OF INFO.

REFERENCES

PLACE & DATE ACQ

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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

Attached are the following materials on the Georgi Dimitrov Shipyards, Varna:

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- a. a 14 page descriptive legend of the Georgi Dimitrov Zavods numbers one, two, and three;
- b. a three page description of the Reserve Labor School for shipyard technicians at Zavod number one;
- c. a detailed sketch of Zavod number one;
- d. a sketch of the lathe machine shop at Zavod number one;
- e. a sketch showing a front view of the major buildings of Zavod number one;
- f. a sketch showing the spare rudder mechanism on a 1000 ton barge;
- g. a sketch showing the deck of a 1000 ton barge;
- h. a sketch showing a top, side, and cross section view of the 1000 ton barge with a detailed view of the rudder mechanism;
- i. a sketch showing the sluice at Zavod number one; and
- j. a sketch of a tower crane.

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VARNA SHIPYARDS

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The Varna area includes three shipyards known as "G. Dimitrov No. 1, No. 2, and No. 3 Shipyards (industry) for Construction and Repair of Ships. No. 1 was formerly known as "Georgi Dimitrov" located to the west of the main basin of Varna Harbor.

No. 2 is the former "Korolovag" located at the point where Devnya Canal joins Devnya Lake.

No. 3 is the former "Neptoyn" adjacent to the electric mobile bridge spanning Devnya Canal.

^{zAVOD} The foregoing shipyards will hereafter - for ease of reference - be quoted as ^{ZABOND} Zabond No. 1, No. 2, and No. 3, the same as labelled by the Bulgarians.

A. Shipyard ^{zAVOD} Zabond No. 1 (Attachment #12 Drawing) refers to ^{ZABOND} Zabond No. 1 Shipyard and adjacent area. Hereunder is definition of symbols indicated in aforementioned drawing.

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^{zAVOD} #38 Reserve Laborer's School - technician ^{ZABOND} section (OYTSILISTE ZA TROYVONTI REZERVNI No. 38, located adjacent to the shipyard)

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Zabond No 1. Until 1954, the latter, was titled as "Kormbso" G. Dimitrov No. 1, i.e., BULGARIAN-SOVIET SHIPBUILDING ORGANIZATION "G. DIMITROV" No. 1. It read as follows in the Bulgarian Language: КОПАГОСТРОИТЕЛНО ГЗАТТАРОСЗБЕТКО ОСВЕКТО "ГДММТРОБ" No. 1

In 1954, the foregoing legend was replaced by the following: "КОРАМБОСТРОИТЕЛНИ I КОРАМБОРЕМОНТНИ ЗАБОНД "ГЕОРГИ ДИМИТРОВ No. 1" i.e., Shipyards (Industry) for construction and repair of boats "Georgi Dimitrov" No. 1.

The legend in Bulgarian Language reads as follows: КОПАГОСТРОИТЕЛНИ И КОПАГОРЕМОНТНИ ЗАБОНД "Г. ДИМИТРОВ" No. 1

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When the Russians entered Bulgaria, the shipyards in question were seized by the Russians as constituting spoils taken in war. Following completion of construction of the 1000 ton barges for the Russians by the afore-mentioned shipyards (which construction cost was considered to have covered value of shipyards stock in Russian possession) complete ownership of shipyard was then transferred to Bulgarian State.

^{zAVOD} ^{Bulgaria}
ORGANIZATION OF SHIPYARDS ZABOND NO. 1 AND ADJACENT AREA

Dimensions of structures (width, length) are quoted in drawing.

1. Anchorage point of Russian freighters where they are loaded with Bulgarian uranium. Length of pier here (built of cube stones) is $2\frac{1}{2}$ times longer than the Bulgarian ship "Chipka". There are no derricks on the pier. The latter is not girded but instead has 3 or 4 iron stakes driven into the river bottom.

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1^a. In late 1954, this location was used as anchorage point by the 4 LST, of which the three were usually moored astern and the fourth laterally.

1^b. Pier stairs. It is in bounds only to Officers who used them to board the row boats to cross to the opposite shore where the Naval Base was located.

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2. One-story structure used as uranium storehouse.

3. Rail track switches facilitating uranium storehouse.

4. Open area for coal storage. large quantities of coal. This was also used for ship fueling. Incidentally Source saw "Parvi Mai" taking coal.

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5. Railroad pier built of cement, utilized as military railroad station (Voena Pamba).

6. One-story wooden structure occupied as billeting quarters by army labor unit composed of 50 to 60 men who are rather detailed in unloading uranium.

7. One-story structure built of baked adobe bricks, (dimensions 60 x 15 meters) used as cow stable.

8. One-story baked adobe brick structure (dimensions 25 x 10 meters). Sign reads as: "TECHNITSESKA PRISTANISNA ROMBOTLINITSA" i.e., Harbor Technical Workshop. It is equipped with one lathe machine, welding apparatus. Approximately staffed by five or six technicians.

9. One-story dwelling house.

10. Railroad line not in use. Was utilized for transportation of material from boat to Zabond No. 1. (Remarks: Shipyard Zabond No. 1 is equipped with own railroad line network. It has - for local use in shipyard - small steam engine and steam derrick running on rails.)

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11. Point where German navy ship "Francfourti" wreck was hoisted.

It was a large navy ship held to the water surface by two floaters. No deck installations or accessories were dismantled. Three hydraulic boilers removed from the foregoing wreckage were hauled to point 11^a. The interior surface of boilers were cleaned by machine apparatus operated by compressed air containing sand, which ejected by force removes rust from metal surfaces. The aforementioned apparatus is known as "RES KON SHOUEN ARARAT". The same apparatus is utilized to clean the outside surface of the boilers. Subsequently they were painted with minium. The three aforementioned boilers were located at point 11^a

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The foregoing boilers were hoisted from "FRANKFOURTI" by floating crane and hauled to point 11^a by railroad flat car.

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12. Anchorage point used by tugboats Parvi Mai and Burghas. Parvi Mai is utilized by the salvage agency. It is also detailed as a tug boat. It is an iron, steam (coal fuel) propelled craft, equipped with diving apparatus for divers. It is primarily used as a salvage boat. It can simultaneously facilitate five or six

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divers. Approximate length, 30 to 40 meters with one propeller. It is also detailed to tow out of the harbor 1000 ton barges on experimental runs prior to their delivery to Russia. BURGHAS is a prewar antiquated iron one engine (coal fueled) tug boat, approximately six to seven meters length, manned by a crew of four. It is ordinarily engaged in auxiliary towing operations.

13. Anchorage point for two barges not in use, built of cement, each containing two holds.

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14. Approximately 100 meters long pier, built of stone blocks. [redacted] it has 3/4ths of the length compared to No. 1 Pier. Two or three (?) are located on the aforementioned pier.

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15. In April or May 1954, (Russian Floating Derrick of 100 ton hoisting capacity) was moored at point #12 (anchorage point for Parvi Mai). It is electric operated without self propelling power. [redacted]

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16. Sandy shore not used.

17. Simple wooden grate, similar to our model, used for hoisting small craft. Rolling pins are built of circular tree trunks greased with pulpy soap to facilitate sliding of conveyor (i.e., makeshift wooden roller). Pipe line stakes with wide foundation (to avoid burrowing in sand) support the craft on the flanks. Top part of the stake is properly inclined, to wedge into the craft's side, thereby firmly supporting it.

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passenger ships: "KALIAKRA" and "EMONA" and the freighter "KOZLONTOYI." General overhaul repairs on minor craft are made on the foregoing grate (i.e., replacement of plates, end axles etc). Likewise, cleaning of the craft's keel is made here. Owing to its slantwise position, the craft slides very slowly to the sea after the cable wire is rendered slack by the laborer.

18. Room where electric winch is installed to service local grate. Point (a) indicates pulleys applying wire cable from the winch to the grate.

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19. Electric derrick, type PYRGOU (KOULOKRAN). (See No. 13 Drawing) It runs on rail tracks, hoisting capacity being three tons. [redacted] derricks model placate indicating that it is an antiquated type facilitating shipyard sluice No. 20. Definition of symbols indicated in No. 13 drawing are quoted herewith:

- a - b) Section a-b are the rotating parts of the derrick
- c) Operator's Cabin
- d) Counter weight
- e) Roller bearings on which section of derrick rotates.
- f) Derrick's boom six or seven meters length
- g) Four wheels on each side
- h) Electric Cable
- i) Electric cables winder. Operates automatically, i.e., when the derrick moves, the cable is rendered either slack or taut. This is to avoid entangling of cable in the pulleys.

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ATTACHMENT NO a

- j) Heavy baked adobe bricks to add further weight to derricks foundation.

DEFICIENCIES OF DERRICKS:

Section a-b of derrick is relatively small compared to derrick's boom (f). Therefore section a-b is dangerously inclined when heavy objects are hoisted.

20, 25 - Two drydock sluices of Zabond No. 1 Shipyards

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- A. Construction of Each Sluice - Floor of sluice, built of cement is gradually inclined to the water.

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the inside walls of the sluice are of cement, strengthened with rods driven into the ground by steam hammer. Length of sluice is approximately 60 to 70 meters and 10 to 12 meters wide. Floor level at the forepart of the sluice - where the flood gate is located - is approximately six to seven meters above the ground. After the forepart of the sluice is flooded, the top level of the sluice is approximately three meters above the surface of the water running in the sluice. The far end of the sluice levels off to the ground surface of the shipyard premises, whereby it is possible for vehicles to enter the sluice. At the forepart of the sluice, there are stone stairs on both sides leading down to the floor of the sluice. ~~They are~~

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- B. Shipbuilding Activities in Shipyard's Sluices.

Barges of 1000 ton capacity, known by the Bulgarians as "HILANDA TONNA BARTZA", were being constructed at the time at the foregoing sluices for the Russians. Only one barge at the time was in each sluice at the time of construction. Owing to the size of the barge, it was not feasible for the aforementioned sluices to take in more than one. The following procedure was adhered to

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at Shipyard Zabond No. 1 One barge was under construction in each sluice. Three or four more barges, already launched, were in the final phase of completion. Two other more barges were under construction at the lateral grate (indicated in #31 drawing.).

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each technician foreman was equipped with relative blueprint when engaged in work on aforementioned barges. Title of print reads as follows: HILANDA TONNA BARTZA (i.e., 1000 Ton Barge).

- C. Period of Time Required for Construction of Barges - Three or four months were required, as of the day keel was laid, to the day it was launched, to construct a 1000 ton barge. One daily shift was on the job from 0800 to 1700 hours with one hour break for lunch. In the event the job was not finished within the specified period, the same laborers worked overtime for one or two hours. only one shift was employed in the shipyards sluice.

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D. Rough Outline of Methods in Barge Construction - Three rows of stumps (one in the center and two more flanking it) are placed on the floor bottom of the sluice to support the newly laid barge keel. Three or four groups, each composed of five or fix persons, are engaged in laying the keel and assembling the different metal sections welded by one welder in each group. Each sluice is equipped with mobile transformer to change the alternating current to continuous. Incidentally, Varna is supplied with alternating current. [redacted] at the time the barges were under construction - five or six mobile transformers of the above type in each sluice. As mentioned above, only work on the keel and welding of parts are conducted in the sluice. The metal sections or parts prior to being welded are prepared at the respective sections in the shipyard which are equipped with the proper machinery. Many of the pieces composing a section are welded in the shipyard workshops (e.g. fore peak, after peak) which are subsequently hauled to the sluice to be installed in the barge. Transportation of the different parts from the shipyard workshops to the sluice, is conducted by tractor towed special four wheel (compact tire) vehicle. Following completion of the barge, it is launched by sliding it over the wooden grate in the following manner. Rolling pins greased with pulp soap are placed under the barge. Oblong beams spliced with iron rods are then placed on top of the rolling pins. Subsequently the barge is stripped off its supporters (i.e., stumps) beginning with the central row followed by the two other rows flanking it. The craft then rests on the grate ready to be launched. Two cable wires fastened to the far end of the sluice are tied to the barge. By opening the floodgate, the forepart of the sluice is flooded thereby snapping the cables to allow the craft to glide slowly to the sea. [redacted] craft being hoisted in the sluice [redacted] by utilizing #18 winch with 25X1 pulleys.

E. Definition of #14 Drawing - Definition of symbols indicated in #14 Drawing pertaining to view of sluice-way:

- a-b Length of 1000 ton barge occupied space a-e. This is to compare with total length of sluice.
- c&d Two staircases on sides of sluice.
- e Floodgate of the sluice.
- f Sea

6. Description of 1000 Ton Barge - Herewith is definition of numbers indicated in #15 Drawing.

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[redacted] Letters on the barge sides indicated that they are Soviet State Danube River Boats: SOBETSKO GKOSOUNTAP STBENO NTOYNAISKO PARAHOTSTBO. [redacted] in Ruse No. 1022, One Thousand Ton Barge. [redacted] 30 to 40 one thousand ton barges have been built. [redacted]

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[redacted] Material for their construction all came from Soviet Union. Dimensions of aforementioned barge approximately 50 meters length, approximately 4 to 5 meters width. Height from keel to main

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deck four to five meters. Hull of barge protruding from the water line is approximately two meters high. It has one hold. Entrance leading to it from the deck is 0.50 meters high.

- a) forepart dry compartment
- b) abaft dry compartment
- c) Semblance to engine room. Equipped with electric generator and heating boiler. Generator supplies the power to motivate the pumps, extricating the water from the dry bottom compartments and from the sea water cisterns.

[] the aforementioned barges are equipped with two pumps. It is possible [] that there may be more than two. Generator of Russian make, supplies current for illuminations. 25X1

- d) Two ventiducts, of the engine room where the generator is located. Barge is not equipped with self-propelling power.
- e) Manual crane anchor
- f) Two lief boats
- g) Balanced rudder. Each barge has two evenly balanced rudders operating simultaneously. The interior of the rudder is filled with asphalt.
- h) Aperture, shut off by valve through which liquid asphalt is poured into the interior of the rudder which subsequently solidifies.
- i) Aperture, in rudder through which chain passes, fasten to the (16x10V?) of the barge. Chain is utilized as (?) to steer the rudder beyond designed angle.
- j) Rudder mechanism. Barge is equipped with two, i.e., one for each rudder, fastened by chain to the rudders' wheel. Details of rudder mechanism abaft is indicated in #15 Drawing (c'Plan). Should one of the cables of the rudder snap, there is a spare mechanism of gear wheels to steer the rudder's axles with the rudder wheel.
- k) System of cog wheel compose spare rudder mechanism. This is used, should the cables connecting the steering wheel with the rudder break. Entire spare mechanism is illustrated in #17 Drawing.
- l) Transversed view of the lateral sea water cisterns. The latter are located between the dry compartment, which extends along the entire length of the barge, and the exterior side of the barge. The lengthwise compartment is transversely divided into smaller compartments thereby creating on each side of the barge , five to six sea water cisterns.
- m) Transversal view of the aforementioned lengthwise partition. 25X1
- n) #16 Drawing illustrates hatch ways on deck leading to the dry bottom compartments. Height of the latter is 0.50 meters. [] the aforementioned 1000 ton barges are the only/ barge types on the

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[REDACTED]

Danube constructed with dry bottom compartments.

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o) General Information Re: Construction of 1000 Ton Barge

Above are constructed with 8 mm plates. Dimensions of each plate is 5 m x 2m. Keel plate (level) is 10 mm. The aforementioned craft is not framed with conventional type beams but the exterior plates are placed as follows: Each beam is not comprised of one piece but is divided into pieces. Each piece is 0.50 away from the other, welded to the interior side of the hull plate. Though each beam piece is of the same width as the hull plate (i.e. 2m) yet it is adjusted to protrude at the above edge of each hull plate by 0.20 m. This is to allow the following hull plate to be welded on the protruding part of the preceding beam. Thus the barge is constructed following the above described pattern. [REDACTED] though 1000 Ton Barges were constructed at Shipyard Zabond No. 1 in Varna for the Russians, yet the job was not supervised by Russian technicians. Prior only to the delivery of the above craft, they were inspected by Russian official, accompanied by the Shipyard Deputy Director and Supervisor of Shipyard ZE-KA No. 1 Workshop.

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21, 26 Two floodgates of sluice, one for each.

22, 23 Two electric cranes, each operating on rail tracks supplied with current conveyed by three wires, lying in ditch parallel to the rail tracks. Three ironrods, resembling those of trolley car, protruding underneath the crane wheel touch respectively the live wires lying in the ditch. Current is three phase. Each crane has eight wheels on each side. They are of German make, installed at the aforementioned shipyard in winter 1953, hoisting capacity of each crane being 40 tons.

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[REDACTED] on cranes model placard, a number reading either as 4000 or 40,000 kilos. Nonetheless [REDACTED] hoisting power of the aforementioned crane is 40 tons. While demonstrating one day, the crane hoisted simultaneously three to four propellers, each weighing three or four tons, one ten ton engine of interior combustion of German make and another heavy item. Floor ground on which the cranes move is strengthened with iron rod cement girders. [REDACTED] such girders being placed for [REDACTED] Crane. Dimensions of the aforementioned girders: Length - 10 meters, width - 0.25 meters, height - 0.25 meters. The girders are driven into the ground by shipyard steam hammer and then cement covered. The rail tracks on which the crane moves, are placed over the aforementioned girders.

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24 Distance between the two sluices is six to seven meters.

27 Pier is six to seven meters high

28 Pier approximately 60 to 70 meters long, 20 meters wide, built of cube stones used for docking 1000 ton barges following their completion. Frequently, the newly constructed barges are moored side by side [REDACTED]

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[redacted] two such barges on one side of the pier and three more on the other side.

- 29 Wooden structure with triangle roof used as painter's workshop.
- 29a Cement barge built by NEPTUNE Shipyard (i.e., Zabond No. 3) was docked at this point in Spring 1954 for installation of metal parts.
- 30 Pier, 20 meters long built of cubestones. Cement barge (quoted in 29a) was moored here following its completion. 25X1
- 31 Ground area on which no technical improvement has been made. This is used for shipbuilding. [redacted] only 1000 ton barges were constructed here, two at a time, lying one after the other on three rows of stumps, i.e., one in the center flanked on each side by one row. Owing to lack of proper grates no repairs are made here. Permanent grate is not available here, launching of barges being obtained from lateral position. Three or four wooden grates (of the type quoted by 17) are utilized for barge launching. Shore is sandy at this point known as STAPEL PESA-TSITEN (i.e., sandy shore for ship building).
- 32 Two electric cranes supplied with current the same as quoted by 19. They are mobile operating on rail tracks, imbedded in cement base. Approximate distance between the two cranes is 12 meters, interceding area being used for ship building. Thereby the aforementioned cranes tower over the newly constructed craft. [redacted] 25X1
- though they are the same as the other, yet the hoisting capacity of the last two are 12 and 13 ton respectively. The above two cranes create an archway and are labelled as "POLTALEN KRAN" (i.e., crane with arch). They run on eight wheels, four on each side. Length of rail tracks on which they run is approximately 120 meters. Distance from rail head to shore is approximately 20 meters.
- 33 Electric cutter installed in wooden structure. It cleaves 16 m.m. plates. [redacted] It services #32 Shipyard. The same cutter is equipped at one end with mechanical punch (i.e., automatic drill). 25X1
- 34 Wooden structure approximately 80 meters long, five meters wide [redacted] 25X1
- [redacted] Two sections quartered in the aforementioned structure are known as #34a and 34b. No. 34a is a tool house where receipted tools are supplied to personnel of #31 Shipyard. No. 34b houses shipyard's tinsmith workshop. 25X1
- 35 Net work of Zabond No. 1. Cement pathways approximately three meters wide (they are marked with red lines).
- 36 Width of exterior fence located approximately 40 meters from the sea.
- 37 Area where plates and miscellaneous items are cleansed with sand and compressed air.

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- 38 One-story baked adobe structure used by lathe machine workshop. [redacted] 25X1
[redacted] 10 to 12 lathe machines of Russian make installed in the afore- 25X1
mentioned structure, one of which is of gigantic size. The operator 25X1
of the latter lathe machine climbs by iron ladder to the platform to
operate it by push of electric buttons. [redacted] 25X1
it is used to smooth surface of ships axles. Electric drills are also
located here.
- 39 Two-story structure utilized as main storehouse by Zabond No. 1 where
plates, rivets, screws, cables, all kinds of electric supplies, electrodes
for welding etc., are stored.
- 40 One-story baked adobe structure where approximately ten persons are em-
ployed. Three iron coke furnaces are installed here. Compressed air
from the air compressor unit is puffed into the aforementioned furnaces.
Furthermore, two anvils and four or five mechanical hammers operated by
compressed air are located in the same structure. All (including the 25X1
largest) hammers, are of Russian origin [redacted]
There is also electric saw machine equipped with rotating iron blade that
can cleave iron rods as much as 20 cm thick.
- 41 One-story tile roof structure built of baked adobe bricks, quartering the
sanitation agency of the shipyards, staffed by one doctor, a dentist and
two nurses. The same agency includes a first aid dispensary. The ship-
yards official exercising supervision over security regulations pertaining
to prevention of accidents is housed here too. His office is titled as
OKRANA NATROUNTA (Work Security).
42. This is the largest structure of Shipyard Zabond No. 1. It is titled
under Russian name J.K. 1 (read us ZE-KA No. 1 - i.e., First Workshop).
Bulgarians call it Boiler Workshop though it is not so. It is cement
built, over ten meters high. The aforementioned workshop includes a
mezzanine floor (marked with red pencil) used as draft room for large
scale designing of ship lines. It is partitioned off to include the work-
shop tool house. Point a-b indicates plate supported to the wall by three
rods utilized as work bench. Dimensions of plate: 20 mm thick, .06
m wide and 0.50 m above the ground floor of the workshop. Assembly work
on craft metal parts is conducted on the aforementioned work bench.
Mechanical equipment of ZE-KA No. 1 is as follows: Two small [redacted]
(old model) electric cutters are equipped at one end with mechanical punch.
Two electric hone machines. Elevated iron rail tracks reaching nearly 25X1
to the ceiling of ZE-KA No. 1 are supported by pillars. Three elevated
electric cranes are operated on the elevated rail tracks. Two of them
are located near the center of the workshop reaching above the work bench
(as indicated by a-b). The third crane is over at the other half of the
section of ZE-KA. The two cranes located above a-b plate have hoisting
power capacity 12 and 3 tons. The third crane has likewise 3 ton hoisting
capacity. Operators of the aforementioned cranes climb to mezzanine
floor located above the pillars supporting the elevated rail tracks on
which the cranes run. There is a pathway from which the operators climb
into the crane's cabins.

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Press motivated by electric generator. The latter supplies power to air compressor unit whereby press functions with compressed air. The aforementioned press is new, of 250 ton capacity

the foregoing press was installed in 1954 inasmuch as preparations to install it at the aforementioned site were made in 1953. There is a third electric cutter located at the center of the workshop in addition to the two foregoing. The third electric cutter in question is motivated by electric generator and can cleave plates as thick as 18 mm. Mechanical punch is attached to its end. Special cutter (guillotine type) is available for cleaving of elongated (20 to 24 mm thick) plates to 4 meters size.

Furthermore furnace is available for incandescence of plates being processed in the finishing phase whereby they are subsequently placed in molds. Wooden hammers give the desired length. fuel used by the aforementioned furnaces, whose approximate dimensions are 10 meters long and 4 meters wide. Leastwise they are not coke or coal fueled. ZE-KA No. 1 roof is latticed with apertures for illumination.

43 Wooden structure: Antiquated electric cutter is located here, (of the guillotine type). cleaving plates to size of 4 meters long, 20-24 mm thick. Specialized operator manage latter guillotine type cutters.

44 Tile roof structure built of baked adobe bricks. Approximately 20 electric lathing machines (2 to 5 meters long each) are located in the aforementioned structure. Four or five are of Russian make (KRASNI PROLETARI model). Though new, model is antiquated. Four or five are of Czechoslovakian make

Special electric machine of Czechoslovakian make is available here too for surface smoothing of minor items. Smoothing procedure is effected by cylinder wheel of same design as used by hone machines. Oblong lathe machine approximately six meters long of German make, was observed also. It operates with belt band rotated by accessory generator. The foregoing lathe machine is for smoothing of ship axles. There is also special electric lathe machines of Czechoslovakian make in addition to the aforementioned. It is utilized in smooth surfacing processing of craft pillars (?). Gear wheels are prepared by special electric machine of Russian make equipped with two blades. Five or six electric lathe machines of German make located here are used also for surface smoothing of petty items. There are known in the Bulgarian language as "SEPING MASINA" two electric (?) of Czechoslovakian origin, are used to adjust miscellaneous drill and carving bits (RAIMBLA). Electric elevated crane, run on rail tracks, located near the ceiling, is operated by remote control. (i.e., operator does not climb on to the crane). Tool house (a) is located in the aforementioned lathe machine shop.

45 Carpenter's workshop. One-story baked adobe brick structure with mezzanine floor where life boats are built. The foregoing shop is equipped with two or three electric band saws and three or four electric planes and vacuum apparatus for suction, of sawdust which is ejected out of the work-

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shop to a waiting van.

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46 Two-story baked adobe brick structure. The ground floor is occupied by the kitchen and dining parlor. The above floor is a meeting room utilized for the entertainment of the shipyards personnel.

47 One-story baked adobe brick structure where ~~4~~ air compressor units are stored. Entrance to this building is strictly forbidden. Window panes painted with white substance bar inside view. Strict measures are to prevent sabotage otherwise volume work of shipyard would be minimized to 50% should such incident occur. Net work distributing compressed air to all shipyard sections is installed.

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48 One-story building housing shipyard administration.
 shipyard deputy director is located here.

49 Saw Mill: One-story tile roof structure built of baked adobe bricks. It is used for cutting of tree trunks and lumber boards.

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50,51 One-story tile roof baked adobe structure consisting of two sections. No. 50 contains bathrooms, designated for laborers.

52 Ten meters high, one-story structure, built of baked adobe bricks, used as smelter. Four or five, and possibly more coke furnaces built with (incandescent?) bricks.
 new cast iron of Russian origin piled out in front of the foregoing smeltering establishment. Elevated electric crane operating on rail tracks picks up the cauldron containing the red hot steel (in liquid form) to pour it in molds. Manipulation of gearing the caldrons over the mold is assisted by one laborer.

25X1

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Desiccators (to dry the molds) are located here.
 it is electric functioned.

53 Triangle tile roof, wooden structure, used as storehouse for coke and screws etc.

54 Two-story tile roof structure built of baked adobe bricks. The ground floor is occupied by the accounting office, cashier and representative of state agency, which ordains regulations and principles on shipbuilding. Representative is Bulgarian but also delegates his Russian counterpart (MORSKI REGISTER). Library is also located here. Shipbuilders are quartered in the above floor.

55 Volley ball terrain for shipyard personnel.

56 OY.T.R.NO 38 Technical Shipyard School.

a) One-story structure (dimensions 30 x 20 meters). It is consisted of four class rooms, one technical laboratory, teacher's office, school administration offices, secretarial office,

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kitchen, dining parlor and store rooms.

- b) Two-story tile roof structure built of baked adobe bricks used as boarding house. Though it is old building, it is well maintained.
- c) One-story structure used as clothing warehouse.
- d) It is consisted of two rooms. The first is the central heating boiler room and the other, the school tool room.
- e) School Entrance
- f) Exterior barb wire school fence.

Remarks: School is located within the premises of Shipyard Zabond No. 1. Organization and function of the foregoing school is quoted in pertinent chapter.

- 57 Shipyard entrance check point.
- 58 Athletic Club for shipyard personnel ("LOCOMOTIVE")
- 59 Main entrance to shipyard, guarded by the police (Militsia) is used by shipyard personnel and visitors.
- 60 Lathe machine shop. One tile triangle roof structure built of baked adobe bricks. Numerous lathe machines are located here. 25X1
- 61 Entrance for the exclusive use of the personnel guarded by a police sentry. Railroad line and public road passing at this point, lead to Shipyard Zabond No. 2 (KARALOVAG).
- 62 One-story structure. Police personnel detailed for the protection of Shipyard Zabond No. 1 are billeted in the aforementioned structure. Source has noted approximately ten men but there are more.
- 63 Railroad line net work within the premises of Shipyard Zabond No. 1.
- 64 Two railroad cars. Each carries one steam crane. of three or five ton hoisting capacity. Above cranes are mobile operated on the entire railroad line network within the premises of the shipyard. 25X1
- 65a Exterior Zabond No. 1 barbwire fence (single strand) 1.5 meters high. It is fasten to wooden stakes. One may enter under it with ease. 25X1
- 65b Exterior Zabond No. 1 wooden fence, 2 meters high. Entrance through the foregoing fence is made with ease.
- 65c Outside walls of structure located at the perimeter of the shipyard

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which constitute the border line to the premises.

- 66 Tile roof shed for lumber storage.
- 67 Dirt road leading from the Naval Base to the city.
- 68 Stove plant known as "METAL".
- 69 Oil seed mill known in the past "BRATIL DONEVI".

Remarks: #18 Drawing indicates front of #42, #44 and #45 structures which are the largest on the premises of Zabond No. 1. No. 19 Drawing indicates front of #60 structure where the lathe machine shop is located.

2nd Security Measures at Zabond No. 2 - Police (MILITSIA) is charged with the protection of aforementioned shipyard. One sentry is permanently stationed at each entrance and approximately 10 sentries patrol the shipyard during the day. All aforementioned sentries are armed with pistol. Sentries patrolling the shipyard premises at night are enforced with police dogs. Personnel entering shipyard is equipped with special card with picture of the bearer attached to it. Students of the adjacent OY ZA TR P No. 38 Technical Shipyard School, enter every other day Shipyard Zabond No. 1 for training. They enter en masse without personal pass. Fire squad is detailed to check fire points in shipyard. It is not equipped with fire engines. Should a fire break out they have been detailed in groups. Smoking is allowed other than the lumber storage area. Personnel is likewise detailed in the event of (?) air raid alarm.

3rd General Information Re: Zabond No. 1 - ZAVOD no Russian technicians are at the shipyard. Nor were there any at the time the shipyards were under joint Russian-Bulgarian administration, other than the Director General who was Russian. Shipyard Zabond No. 1 does not communicate privately with DEVN~~LA~~ CANAL. Zabond No. 1 personnel is estimated at approximately 1500. The foregoing shipyards work with one shift. Winter hours from 0800 to 1700 hours with one hour break for lunch. The same shipyards are equipped with three or four trucks. 25X1

ZAVOD
B. ZABOND NO. 2 SHIPYARD Bulgaria

So are the above shipyards currently called, formerly known in the past as "KORANOVAG". The aforementioned shipyards are marked under #20 in #16 Drawing. rough information is furnished pertaining to the above. Inasmuch as it is destroyed, Floating Dock "BULGARIA" does not currently service the aforementioned shipyard. The aforementioned floating dock is moored outside the premises of Zabond No. 2 in the shallow waters of DEVN~~LA~~ LAKE adjacent to the old Varna Railroad Station. The aforementioned shipyards are equipped with two wooden grates of similar type described in present utilized by shipyards Zabond No. 1. 25X1

In 1953 construction work on two tanker barges (w/o self propelling power) at point (a) in pertinent drawing. Construction of aforementioned two barges was processed on grounded supports. they were being built for the Russians. Cement craft was noted at point (b) at the same 25X1

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25X1

time. It was fish processing floating plant, docked there to undergo finishing job on its metal parts. The aforementioned craft was built at Shipyards Zabond No. 3. [redacted] the latter craft was to be delivered to Russia. Zabond No. 2 includes a group of five or six large one story structures. Capacity of afore- 25X1 mentioned two tanker barges under construction was 500 tons each. Exterior hull plates were riveted. Approximate ~~7~~ personnel employed at Zabond No. 2 is estimated [redacted] to be 500. 25X1
 <AvOJ

C SHIPYARD ZABOND NO. 3 - So are the aforementioned shipyard called formerly known in the past as "NEPTOUN". This indicated in #15 Drawing (point 20). Zabond No. 3, (for construction of cement craft) is located on the Varna-Asparouhovd Road adjacent to the electric mobile bridge spanning DEVNO CANAL. [redacted]

[redacted] It is equipped with two grates. At 25X1 point (a), [redacted] open shed, approximately 15 meters high, where cement was 25X1 poured in molds. The latter (i.e., molds supported on stumps were launched on wooden grate similar shed was located parallel to the first (i.e., point a). Entrance to Zabond No. 3 is indicated at point (b). [redacted]

[redacted] Cement craft launched from the latter shipyards are moored 25X1 to Shipyards Zabond No. 1 and 2, to undergo finishing job on metal parts. 25X1

D PERMANENT DRY DOCK - [redacted]

Information pertaining to the aforementioned dry dock (opened in September 1955), [redacted] Floodgate of permanent dry dock located at DEVNO CANAL was built at Shipyards Zabond No. 1. Construction work on aforementioned floodgate commenced either in autumn 1953 or early 1954 and finished in summer 1954. It is approximately 15 meters long and 3 meters wide (at the broadest point). Plates are welded. It was built at point 31 indicated in #12 Drawing by SIOPOF (surname SIOPA), technician foreman who [redacted] has built four other smaller floodgates [redacted] Permanent Dock is called by the Bulgarians as (SOYH DOCK".) 25X1

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mentioned school is indicated in #12 Drawing (serial #56) description of school building is quoted in chapter re: ORGANIZATION OF ZABOND NO. 1 SHIPYARDS. Number of students acceptable at the aforementioned school depends on personnel requirements of shipyards. The aforementioned school includes the following three sections (specifications):

- a. Fitters or blacksmiths specialized in ship construction and repairs. (SLOSERI ZASTROES IREMONT NA KOREMBI)
- b. Fitters and blacksmiths specialized in hydraulic and steam pipe installation performed on ships either in construction or repair storage (plumbers).
- c. Electric-oxygen welders.

Attendance is two years. In the first year (as of September until July) trainees are taught theoretical principles being subject every other day to practical training at Zabond No. 1 Shipyards. The same program is adhered to in the first quarter (i.e., as of September and December) of the second year of attendance. As of January until July (2nd year) trainees are allocated in Varna or Ruse Shipyards for apprentice-ship course.

In 1953-54, Class accepted the following trainees.

- A Section 70 trainees
- B Section 50 trainees
- C Section 30 trainees

On September 1, 1954, following trainees entered in respective sections:

- A Section 60 trainees
- B Section 35 trainees
- C Section either 23 or 25 trainees

Data provided by the Shipyard pertaining to personnel requirements, determines the number of trainees to be accepted at the foregoing school. Sixty-six completed the prescribed course at A Section in 1953.

Qualifications: The following prerequisites are submitted by the prospective trainees applying to the foregoing school.

- a. High School Diploma
- b. Background History (in duplicate)
- c. Age: Not over 17
- d. Testimonial letter furnished by Municipal or Community Board of the district applicant comes from. This letter is forwarded through competent channels to the aforementioned school.

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School provides clothing items, food and board.

25X1

Nikola KOVATSEF was School Director in 1953. In Autumn 1954 the foregoing director was replaced by Nikola RAMBATZIEF

25X1

The following were training instructors of 'A' Section (fitters): Nikola DIMITROV, former reserve naval officer Ivan Markof FILIPOF

25X1

A. KOSAMBOF was teacher at 'C' Section (welders).

A. MANDEF taught in all three sections of the aforementioned school.

P.O.A. DENISKOF, taught in 'B' Section (hydraulics).

Curriculum: Special Technology and Plans. taught by TSEKOFSKI

25X1

Mathematics: Professor RANDEVA

Physics: Professor ILIEV

Ship Designing: Engineer-Shipwright instructors: Zaltko ZLATEV, GANTSEF. Both were employed as draftsmen at Zabond No. 1

Russian Language: Taught thrice weekly

25X1

Political Guidance: GOURGIEVA (female)

Physical Training: Professor EVGENI KORN AZOF,

Material Duration: Professor DOMBREF

Bulgarian Language: & Literature: Professor Pendo PENIEF.

The foregoing curriculum was prescribed at 'A' Section (fitters) barring ship designing course being taught in 'B' Section.

Engineer-Shipwright TSEKOFSKI was the school key instructor in technical training.

Party: Ivan Markof FILIPOF, was D.N.S.M. Faculty Secretary and Faculty Party Organization Secretary.

25X1

School Quarters: School building was formerly textile mill. the aforementioned school was closed some time ago by Sanitation Center owing to unsanitary conditions but reopened upon failure to locate better building. The building is flea infested. It is lacking in space as result of which half of the trainees are billeted in the school and the other half in another building, located outside

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the school premises at VELIKO TER NOVA St., (possibly #18) adjacent to the railroad station. The above story is used as a school dormitory. However, the same story is used as billeting quarters by Zabond No. 1 Shipyard laborers. 1953 Class was billeted in the latter building. The ground floor of the same building was utilized as storehouse. 25X1

Daily School Program: Daily lessons averaged six to eight hours.

A. Daily Theoretical Lessons Program:

0700-0715 hours - Reveille
 0715-0730 " - Gymnastics
 0730-0800 " - Breakfast - Recess
 0800-1230 " - Class lesson (five hours)
 1230-1300 " - Noon Meal
 1315-1530 " - Class lessons
 1530-1700 " - Recess
 1700-1900 " - Home study
 1930 " - Supper

25X1

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Subsequently, departure of trainees billeted at VELKO TERNOVON St. dormitory.

B. Daily Training Program: Same program as the foregoing during hours 0700-0730.

0730-1230 hours - practical training at Zabond No. 1 Shipyards. [redacted]
 [redacted] trainees of Hydraulics Section are trained at Zabond No. 2 Shipyards (formerly KORALOVAG) inasmuch as hydraulics installations are available at the latter shipyard.

1230-1330 hours - noon meal.
 1330-1530 " - home study.

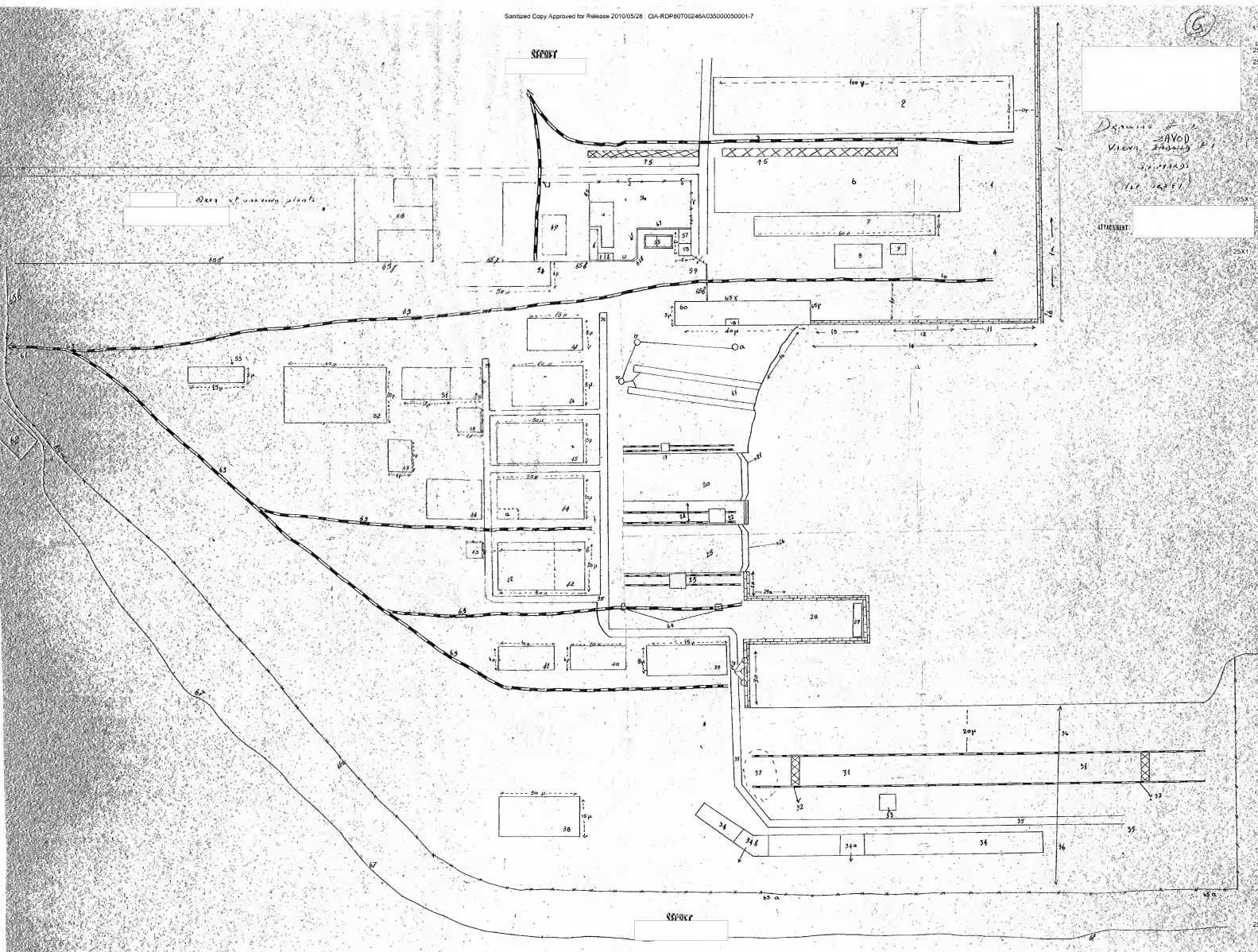
Subsequently, departure of those trainees equipped with two-hour leave pass. Ten to fifteen trainees are permitted daily to leave school premises for a period of two hours (i.e., 1700-1900 hours).

General Information: Trainees wear black uniform (i.e., closed jacket, trousers and cap with badge). Wrench and hammer are engraved on cap badge in lieu of national emblem. Leather belt is worn with buckle bearing initials: Y.T.R. Likewise shoes worn by trainees are black. 25X1

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Denmark 24V00
View 24V00 P1
(100 00000)

OTHER: [redacted]

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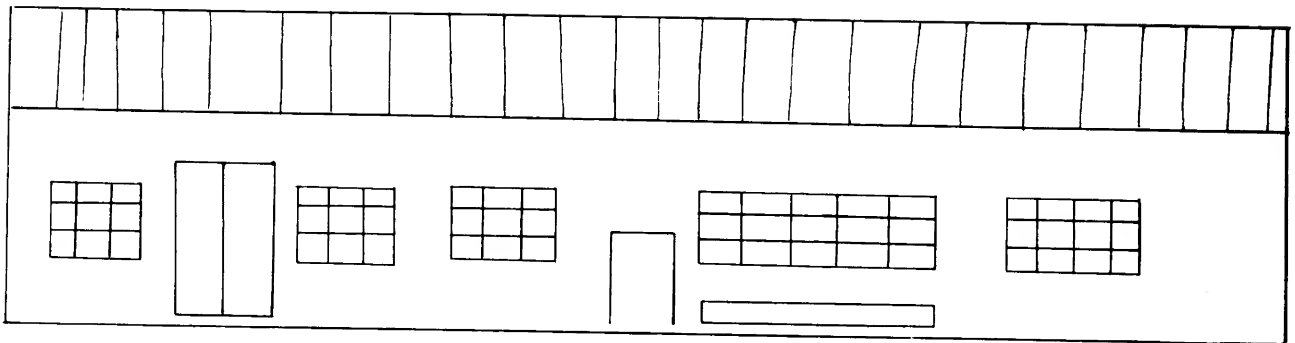
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Rough Drawing II

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*Front View of Lathe Machine Shop #20
- South View -*



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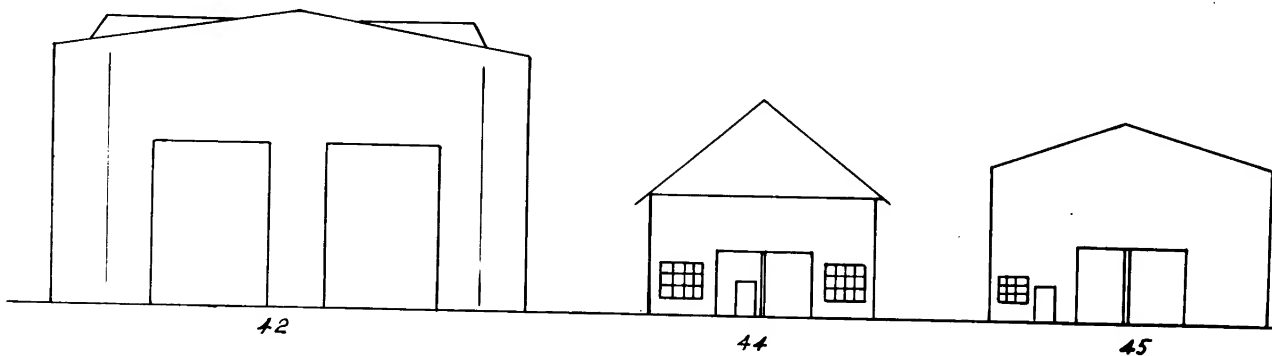
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VIEW - front of the major structures of the
G-2 & COMSEC Bldg. installations

Rough drawing #18

25X1

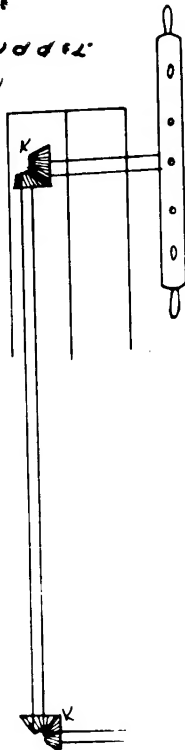
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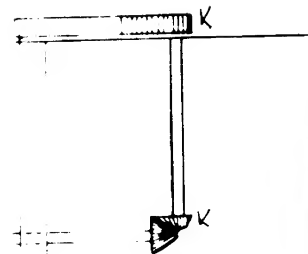
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Chart indicating side
view of the space rudder
mechanism (MARINERO)
attached to 1000 ton
barge.



Drawing No. 17 25X1

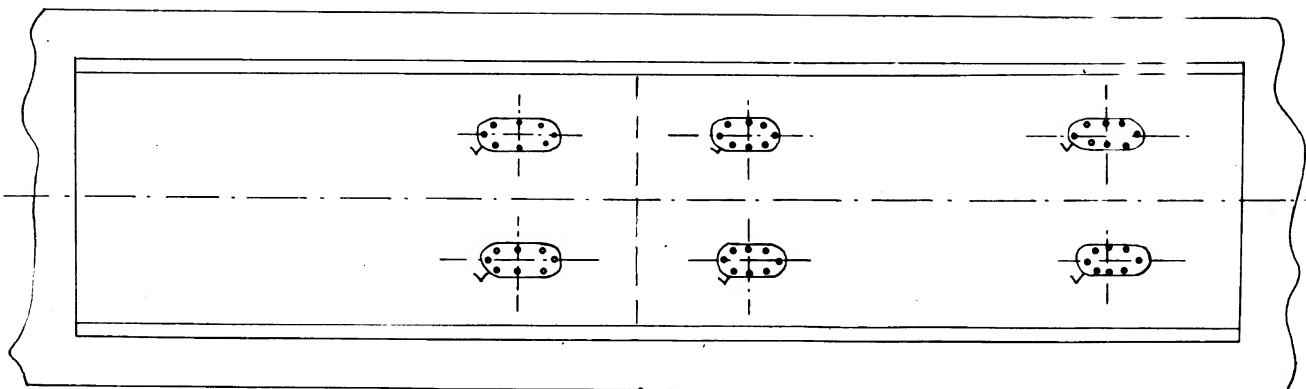


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Rough Drawing #16 25X1

Deck view of the 1000 ton barge
indicating dry hatch ways



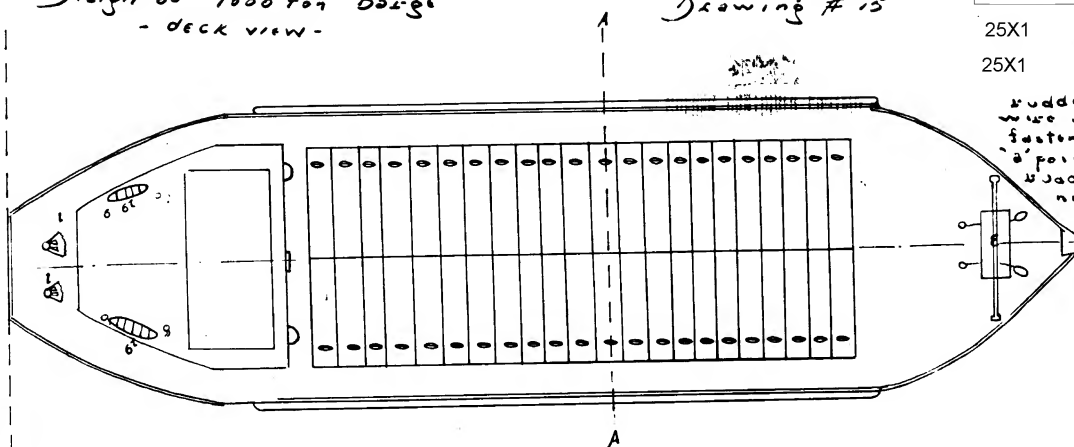
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Design of 1000 ton barge
- deck view -

Drawing # 15



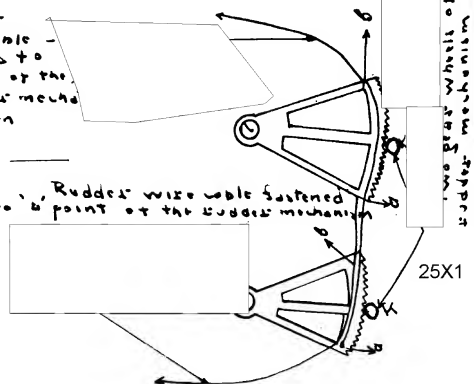
25X1

Rudder mechanism as seen
on deck from the stern

25X1

Rudder
wire cable -
fastened to
'a' point of the
rudder mecha-
nism

Rudder wire cable fastened
to 'b' point of the rudder mechanism

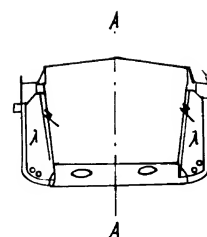
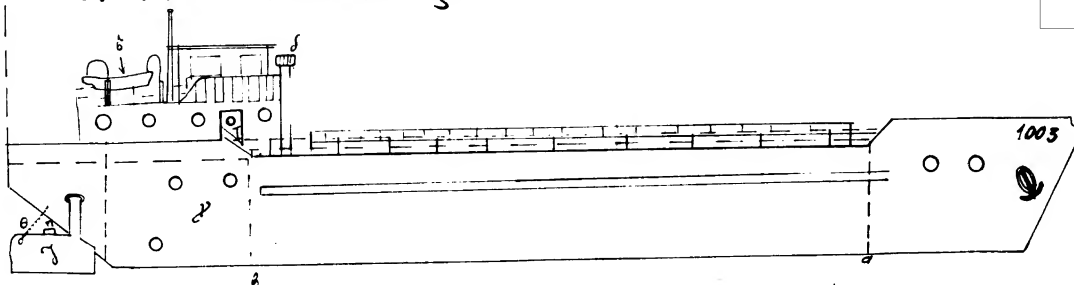


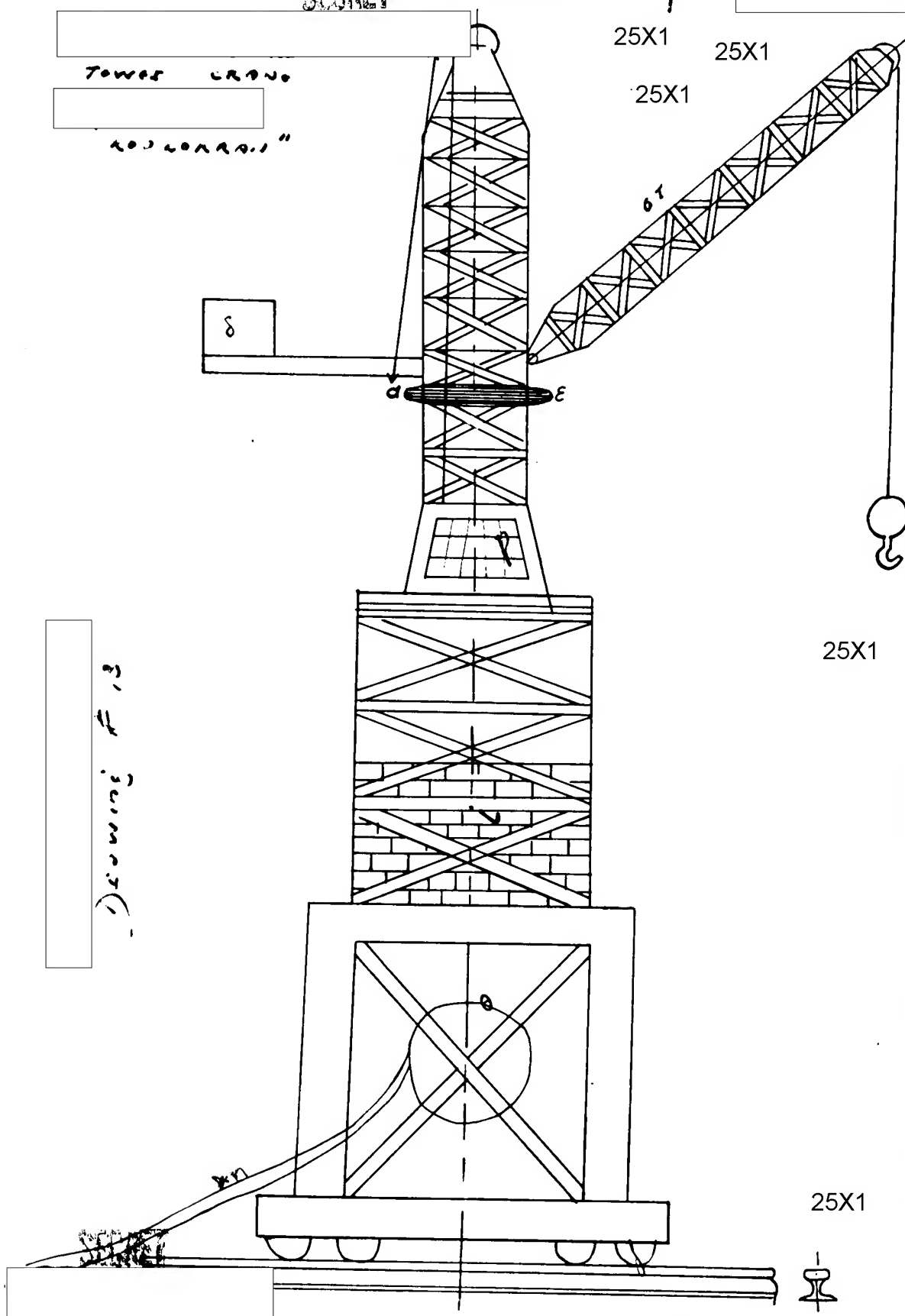
rudder mechanism
rudder wheels of the rudder
operated by a rudder
control mechanism

25X1

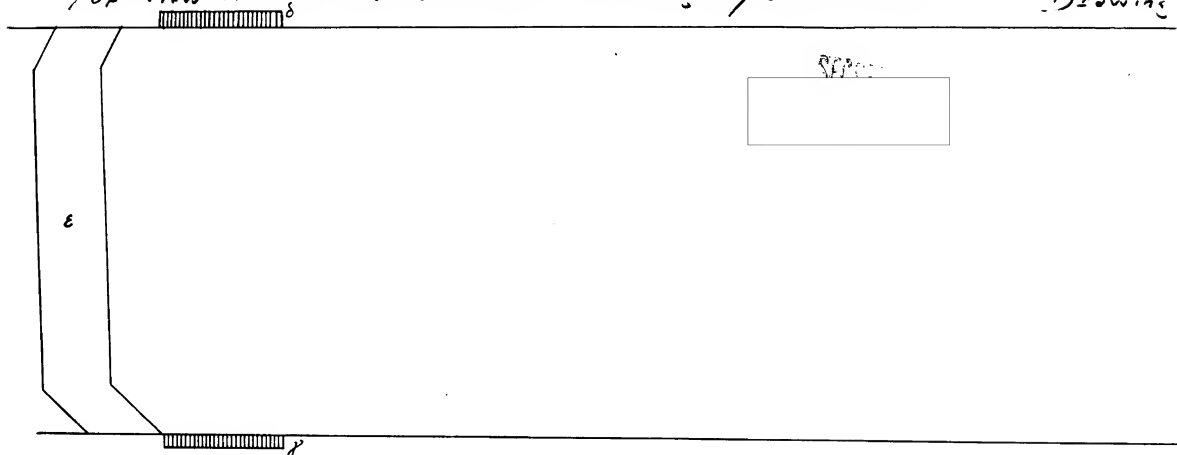
Transverse section view of 1000 ton
barge

Side view 1000 ton barge





Top view of No. 1 Lagoon in various indicating dry dock sluice



Side view indicating dry dock sluice

